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STUDY DESIGN ARTICLE

Return to work among employees with common mental disorders: Study design and baseline findings from a mixed-method follow-up study

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Abstract

Aims: Most research on return-to-work (RTW) has focused on musculoskeletal disorders. To study RTW in employees sick-listed with common mental disorders (CMD), e.g., stress, depression, and anxiety, the National Research Centre for the Working Environment initiated a study on "Common Mental Disorders, Return-to-work, and Long-term Sickness Absence" (CORSA). The aim of the study is (1) to identify predictors of RTW from the environmental, the individual, and the health-related domain and (2) to explore the RTW process based on study participants' experiences. The purpose of this paper is to present the study design and the characteristics of the participants, including analyses on non-response and the prevalence of major depression. *Methods:* CORSA is a mixed-method follow-up study encompassing quantitative and qualitative analyses in a cohort of employees sick-listed with CMD. Participants were all employees who suffered from CMD and whose applications for sickness absence benefits were processed by the Job Centre Copenhagen (a subunit of the municipality) between July and December 2007 ($n = 721$). Data on predictors for RTW were collected from (1) administrative application forms filled out by all participants when applying for benefits ($n = 721$), and (2) baseline questionnaires sent to all participants (responders: $n = 298$). Data on RTW was retrieved from a national sickness absence registry and from 6-month follow-up questionnaires ($n = 226$). To explore the RTW process we will primarily use data from in-depth interviews with selected participants ($n = 16$) supplemented with data from the two questionnaires. ***Conclusions:*** **The mixed method design allows for a more comprehensive understanding of RTW by triangulating qualitative and quantitative methods.**

Key Words: *Common mental disorders, depression, return to work, sickness absence*

Rationale for the study

Return-to-work (RTW) after long-term sickness absence is a complex phenomenon: RTW often involves a range of stakeholders with competing interest and is not solely determined by the type and severity of the health problem. This multifactorial perspective is in line with the International Classification of Functioning, Disability and Health (ICF) model, which has gained increased acceptance within the field of occupational rehabilitation [1,2].

Most of our current knowledge is based on research on musculoskeletal problems showing that psychosocial (e.g. recovery expectations), individual (e.g. age) and work-related factors (e.g. heavy work) are predictive of RTW [3,4]. To date, little is known about what facilitates or hinders RTW in employees

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with common mental disorders (CMD), such as, stress, depression, and anxiety. So far, studies on RTW and CMD have demonstrated conflicting findings, especially regarding socio-demographic factors, such as, gender and education [5–10], whereas older age has been associated with longer duration of absence and risk of disability pensioning in several studies [8–10]. In a study of predictors for RTW in employees with CMD, Nieuwenhuijsen et al. found no effect of the level of depressive symptoms, prior absence, or the work relatedness of the condition [9]. However, positive recovery expectations predicted a more favourable RTW [9], which corroborates with findings from Hejbel et al. on employees with musculoskeletal and mental health complaints [11]. Moreover, two studies showed that the diagnoses and anxiety predicted a longer duration of absence [9,12] and Post et al. found that better self-rated health predicted a higher RTW rate [13]. Studies investigating environmental factors are scarce. Engström and Janson found no effect of occupational sector [5], but Koopmans et al. found that sick-listed employees with depression from the public and educational sector had longer absence spells than employees in other sectors and that employees working in small companies had longer absence spells than those in large companies [8]. Finally, Nieuwenhuijsen et al. found an effect of supervisory behaviour for employees with CMD, but only among the non-depressed [14].

Considering that today CMD is leading cause for granting of disability pension in several countries, including Denmark and the UK [15,16], it is prudent to investigate RTW in employees with CMD. In 2007 the Danish National Research Centre for the Working Environment initiated the research project "Common Mental Disorders, Return-to-work, and Long-term Sickness Absence" (CORSA). The overall aim of the CORSA study is to better understand RTW in employees sick-listed with CMD by converging qualitative and quantitative methods. Quantitative measures of work, individual, and health characteristics are used to investigate predictors of time to RTW. In addition the RTW process is explored using qualitative in-depth interviews with selected study participants supplemented with quantitative measurements from questionnaires distributed to all participants.

The purpose of this paper is to present the study design, characteristics of the participants, and a non-response analysis. Because we only had self-reported reasons for absence, we also present the prevalence of major depression in a subsample of participants measured with a validated psychiatric rating scale.

Jurisdictional context

In Denmark, employers are obliged to finance sickness benefit for the first 21 days of absence (before June 2008 it was the first 15 days) [17]. When the absence period exceeds 21 days the employer is eligible for sickness benefit compensation from the municipality. However, if the sick-listed employee is registered with a chronic disease or if the workplace contracted an insurance policy, the sickness benefit compensation can be paid from the first day of absence. In order to receive sickness benefit, the sick-listed employee is obliged to fill out an administrative application form and to state the reason for the absence. These application forms are processed by municipal job centres and officials at these centres are responsible for monitoring the absentee and outlining reintegration plans [17].

Design and measurements

We used a concurrent mixed-method design. In this design, the researcher collects the qualitative and quantitative data at the same time and integrates the information in the interpretation of the overall results [18]. Rauscher and Greenfield have proposed that the mixed-method design is particularly suitable for studying the complex processes of disablement as denoted in the ICF model because combining different methods allow researchers to capitalise on the strengths of each [19]. Quantitative research is particular suitable for examining causal relationships and making predictions, but often fails to illuminate the context within which these relationships occur. In contrast, qualitative methods can explore social and behavioural issues related to both illness and rehabilitation at a deeper level [19].

Two research questions will be assessed: (1) which factors predict time to RTW in employees with CMD? and (2) how do employees with CMD experience sickness absence and RTW? To answer the first research question we used quantitative methods. Data on predictor variables were obtained from administrative application forms collected from the Job Centre Copenhagen and a baseline questionnaire distributed to all participants. Time to RTW was ascertained from the National Registry of Social Transfers (DREAM). To answer the second research question we triangulated qualitative data from in-depth interviews and quantitative data from questionnaires. The interviews focused on the participants' interpretations of key events and interactions with RTW stakeholders during the RTW process. The questionnaires were, among other things, used to quantitatively measure the participants'

assessment of contact with and support from different RTW stakeholders.

Recruitment

The CORSA participants were recruited from the population of employees residing in the municipality of Copenhagen who were sick listed because of CMD and had applied for sickness absence benefits from the municipality of Copenhagen. From July 2007 to December 2007, officials at the Job Centre of Copenhagen flagged all application forms on which the employee stated that a psychological health problem (e.g., stress, depression, anxiety) was in full or in part the reason for the absence. Employees who wrote that their sickness absence was caused by psychological ill health in general or psychologically straining events (e.g., mobbing at work, divorce) were also included (Table I). Next, the research team applied further exclusion criteria (see Figure 1). We excluded 71 persons for whom the period from first day of absence until inclusion in this study exceeded 12 weeks, 26 persons who were unemployed or self-employed, nine persons no longer resident in Denmark and 20 persons who gave manio-depression, psychosis, schizophrenia, or substance as the reason for their absence. Moreover, eight persons, who occurred twice in the application forms, were excluded resulting into a total sample of 721. On average, the duration from first day of absence until inclusion was 49 days (SD 15; median 49).

We sent out a baseline questionnaire to all participants. We intentionally did not send out reminders to avoid additional pressure on potentially vulnerable persons recognising the possible negative impact on the response rate. This decision was made after conducting three pilot interviews with sick-listed employees and consulting officials at the Job Centre. The pilot interviews revealed that many questions were indeed sensitive and the officials warned us that sick-listed employees often feel frustrated about the amount of forms they have to fill out when applying for benefits. Sensitive questions were omitted or rephrased. Of the 721 participants, 298 answered the questionnaire (41% response rate). Six months after the baseline questionnaire, the baseline responders received a follow-up questionnaire, which was returned by 226 participants (76% follow-up

Table I. Study sample characteristics, and non-response analysis.

Characteristic	CORSA participants ($n=721$)	Baseline responders to questionnaire ($n=298$)	Baseline non-responders to questionnaire ($n=423$)	Statistics
Gender, % (n)				
Women	69.1 (498)	78.9 (235)	62.2 (263)	
Men	30.9 (223)	21.1 (63)	37.8 (160)	$\chi^2=22.78$, $p<0.001$
Age, mean ± SD years	40.1 ± 10.8	40.3 ± 10.5	39.9 ± 11.0	$t=0.53$, $p=0.6$
Job, % (n)				
Research, art, technical work	11.4 (73)	15.4 (44)	8.2 (29)	$\chi^2=35.14$, $p<0.001$
Management	1.3 (8)	2.5 (7)	0.3 (1)	
Administration	20.2 (129)	20.7 (59)	19.8 (70)	
Sales	8.0 (51)	5.6 (16)	9.9 (35)	
Service	13.0 (83)	11.6 (33)	14.2 (50)	
Manual work	10.0 (64)	5.3 (15)	13.9 (49)	
Health	11.4 (73)	9.8 (28)	12.7 (45)	
Social work	19.4 (124)	22.5 (64)	17.0 (60)	
Education	5.2 (33)	6.7 (19)	4.0 (14)	
Missing	(83)	(13)	(70)	
Reason for absence, % (n)				
Stress/burnout	48.3 (348)	54.7 (163)	43.7 (185)	$\chi^2=11.13$, $p=0.01$
Depression	35.9 (259)	33.2 (99)	37.8 (160)	
Anxiety/PTSD/eating disorder	3.3 (24)	3.4 (10)	3.3 (14)	
Psychological health problem, not specified	12.5 (90)	8.7 (26)	15.1 (64)	
Expect to return to current workplace, % (n)				
Yes	73.8 (457)	75.1 (190)	73.0 (267)	$\chi^2=0.36$, $p=0.55$
No	26.2 (162)	24.9 (63)	27.0 (99)	
Prior absence due to CMD, % (n)				
Yes	22.4 (149)	24.1 (67)	21.2 (82)	$\chi^2=0.79$, $p=0.37$
No	77.6 (516)	75.9 (211)	78.8 (305)	

CMD, common -mental- disorders; CORSA, common mental disorders, return-to-work, and long-term sickness absence; PTSD, post-traumatic stress disorder.

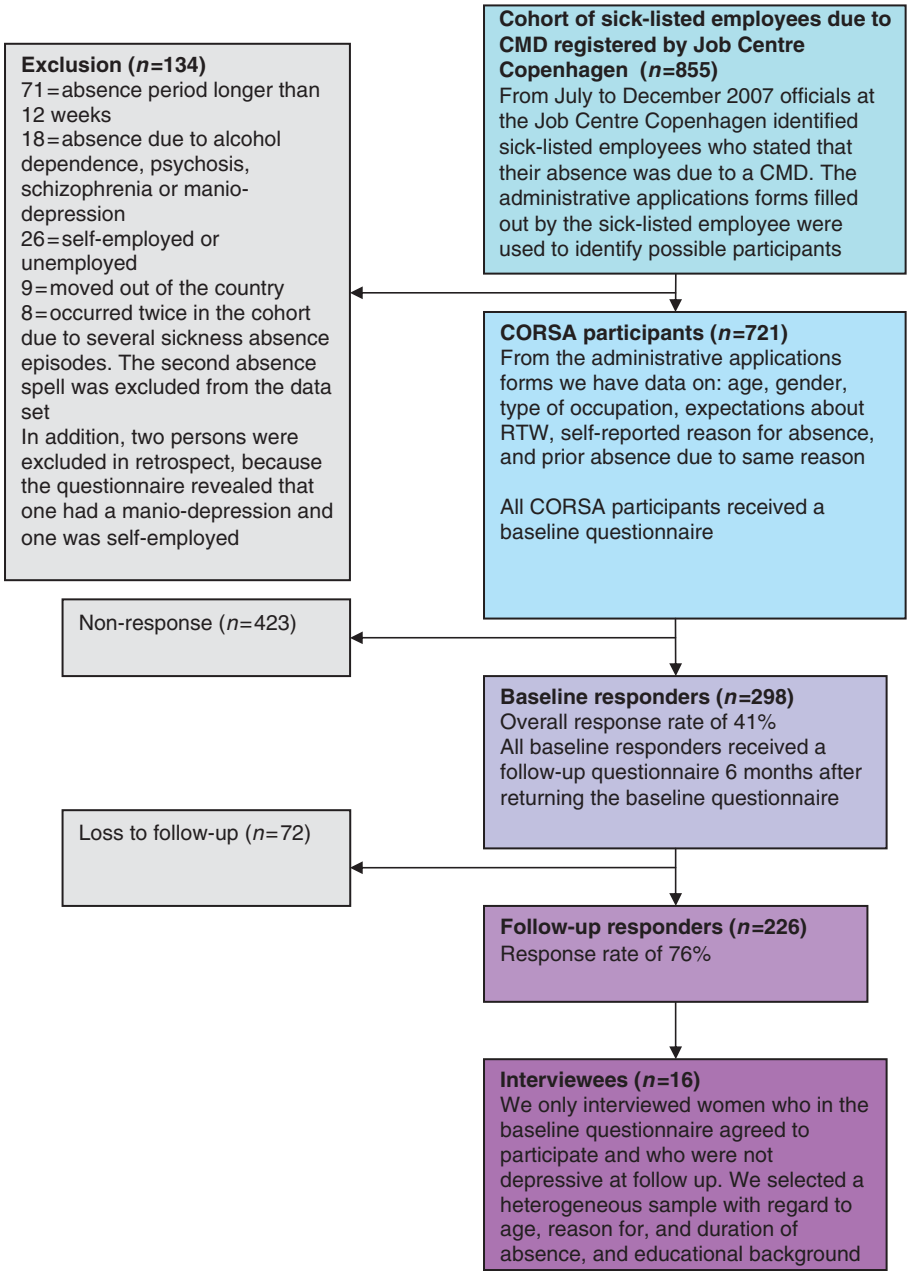

Figure 1. Data collection procedures in the CORSA study.

response rate, 31% of the original 721 participants). In case of non-response to the follow-up questionnaire we sent out two reminders; the first reminder after 1 month and the second reminder 2 weeks after the first reminder.

Among the baseline respondents, 181 participants (148 women and 33 men) agreed to be contacted by telephone and to potentially participate in a personal interview. Data from the baseline and the follow-up questionnaire were used to purposefully select a heterogeneous sample of female interviewees regarding factors known to be important for RTW [2], e.g., age, education, occupation, duration of and self-reported reason for sickness absence, to ensure variations regarding the RTW experiences. Only women were selected because they constituted the vast majority of the study participants. Moreover, considering the possible psychological strain of the interviews we did not contact participants who at follow-up: (a) fulfilled the criteria for DSM-IV major depression, (b) stated that their health was worse than six months ago.

Interviewees were contacted by telephone and 16 semi-structured interviews were conducted by the first author either at the interviewee's home, at their work place, or at the research centre. A semi-structured interview guide, which focused on main events and interactions with key RTW stakeholders, was developed. At the time of the interview, 13 interviewees were back at work (11 fulltime and two part-time), the remaining interviewees were either sick-listed ($n = 1$), unemployed ($n = 1$) or started schooling ($n = 1$). The interviewees ranged from 30–55 years of age, and had been sick-listed between 1.5 and 12 months at the time of the interview. On average, the interviews lasted between 1 and 1.5 hours. All interviews were audio-taped and transcribed verbatim.

Predictors of RTW

In accordance with the ICF model we will investigate potential predictors of RTW from the individual, environmental and health domain. The administrative application forms collected from the Job Centre of Copenhagen and the baseline questionnaires were used to obtain data on predictor variables. Because not all participants filled out the baseline questionnaire, analyses will be conducted separately for predictors from the administrative application forms ($n = 721$) and from the baseline questionnaire ($n = 298$).

Predictors from the application forms

From the administrative application forms we extracted information about gender, age, and expectancy of RTW, type of occupation, occupational grade, prior absence, and self-reported reason for absence. Expectancy of RTW was measured with the question "Do you expect to be able to return to your workplace?" (yes/no). Type of occupation was categorised based on a Danish version of the International Standard Classifications of Occupations and occupational grade were categorised by the classification of socioeconomic status for employees used by the Statistics Denmark. Self-reported reason for absence was measured with an open-ended question and collapsed into four categories listed in Table I and prior absence was measured with the question "prior absence due to the same reason" (yes/no). Analyses based on the applications forms will be performed for all participants ($n = 721$).

Individual predictors from the baseline questionnaire

From the baseline questionnaires we obtained supplementary information on socio-demographic variables, including, education, cohabitation, and occupational position of the partner, and on motivational factors, including motivation to return to current workplace and generalised self-efficacy. Motivation to return to current workplace was measured with the question: "If you can choose freely, to what degree, do you want to return to your workplace?" and generalised self-efficacy was based on the scale developed by Schwarzer et al. [20].

Environmental predictors from the baseline questionnaire

Environmental predictors included characteristics of the workplace (size and private versus public) and contact with and support from RTW stakeholders. We asked the participants if someone from the workplace contacted them after reporting sick with the response categories: a colleague, my supervisors, the top manager, the union representative, the shop steward, none, and other. Support from RTW stakeholders was measured with the question "Do you have someone with whom you can talk to about important personal issues?" Respondents were asked to rate their partner, children, family, friends, colleagues, officials, the shop steward, and the general practitioner. Also, we asked the respondents if they could receive the necessary help and support for practical duties by family and friends. To measure support specifically for RTW, we asked the respondents to what degree they agreed with the following statements: "(1) my colleagues want me to return when I feel ready, (2) my supervisor wants me to return when I feel ready, (3) I am afraid of losing my job if I do not RTW soon, (4) my supervisor tries to pressure me to quit, and (5) my supervisor is pressuring me to RTW, even though I do not feel ready". Additionally, we asked how well participants thought the workplace managed their sickness absence and whether or not the workplace tried to help them RTW or offered them counselling.

Health-related predictors from the baseline questionnaire

In the baseline questionnaires we measured major depression, anxiety, use of medications, self-rated health, work-relatedness of the condition, and activity limitations. We measured major depression with the Major Depression Inventory (MDI), a 10-item self-rating scale for symptoms characteristic for depression. The MDI is scored on a scale from 0 to 50 points with 20–26 points indicating a less severe depression and 27 or more points indicating a more severe depression [21]. In addition, the MDI includes an algorithm that allows assessing prevalence of major depression according to the criteria of

the Diagnostic and Statistical Manual version IV of the American Psychiatric Association (DSM-IV criteria) [20,22]. Anxiety symptoms were measured with a subscale from the brief case-finding questionnaire by Christensen et al. [23] and musculoskeletal symptoms with the Standardized Nordic Questionnaire for the analysis of musculoskeletal symptoms [24]. Use of medications was assessed with the question "Within the last 3 months did you use: sedatives, sleep medication, antidepressants or none?"

Self-rated health was measured with the question "How will you evaluate your health status during the last year?" and the work-relatedness of illness was measured with the question "What, in your opinion was the main reason for becoming sick?" with the response categories "Circumstances at work", "Circumstances in private life", "Other circumstances", and "Do not know".

Regarding activity-limitations we asked the participants how much their physical or emotional problems made it difficult for them to see other people and how often they had problems performing work or daily activities due to physical health problems within the last 4 weeks. These two questions were developed specifically for this study with inspiration from SF-36 [25]. For work-role-functioning, we used a scale developed by Finn Diderichsen (unpublished material). Respondents were asked to report how often they had experienced difficulties performing the following work tasks; managing work load, cooperating with colleagues, clients, patients, making fast decisions, remembering things important for work, and managing physical demands within the last three months of working. Analyses based on predictors from the baseline questionnaires will include only baseline responders ($n = 298$). In the follow-up questionnaire, all measures of health related variables (MDI, anxiety symptoms, self-rated health, activity limitations, and work-role functioning) were repeated.

Outcomes

The primary outcome in the quantitative part of the study was time until RTW. Each participant ($n = 721$) was followed up by linking their unique social security number with the Danish National Register of Social Transfer payments (DREAM register), which contains weekly updated information on granted sickness absence compensation of sick leave spells longer than 2 weeks since 1982. A more detailed description of DREAM and its use in scientific studies has been published elsewhere [26]. In addition to data on RTW outcomes we also retrieved information about type of sickness absence (e.g. full-time or part-time) and sickness benefit transfers 1 year prior to the study from DREAM. From the follow-up questionnaires we have more specific information about the employment status, e.g., whether the respondents returned to a new employer or to the same employer. These analyses will be restricted to responders of both the baseline and the follow-up questionnaire ($n = 226$).

The RTW experience

To explore the participants experiences of RTW, we collected qualitative data from 16 in-depth interviews, supplemented with data from the follow-up questions (and to a lesser extent the baseline questionnaires). The qualitative interviews were used to develop a conceptual theory explaining the RTW process based on empirical findings, whereas the questionnaires quantitatively measured contact with and support from key RTW stakeholders.

A constructivist version of Grounded Theory, as formulated by Charmaz, guided the data collection and analyses of the qualitative interviews [27]. This version has its roots in phenomenology and symbolic interactionism which leads the researcher to look at how the interviewees construct meaning of events. Grounded Theory is an explorative empirical approach and accordingly the analysis evolved as the data was collected. We strived to identify one core category, which was selected due to its explanatory power. The collection of data stopped when theoretical saturation was achieved, i.e. when the collection of data did not result in new theoretical insights or new properties of the categories.

We obtained quantitative measures of contact with and support from RTW stakeholders from the follow-up questionnaire. First, we asked the respondents about contact with stakeholders from the work, social insurance and health domain, Next, we asked them to assess support from; the general practitioners, psychologist, psychiatrists, officials from the Job Centre, unions, colleagues, and supervisors.

Additionally, we used the baseline questionnaire to investigate their wish for job accommodations (including, reduced working hours, more flexible working hours, less flexible working hours, other tasks, being moved to another department, less responsibility, more or longer breaks, and more help from colleagues when things get busy). In the follow-up questionnaire, we assessed the actual accommodations being offered. Employees who resumed work, were also asked to evaluate factors important for their RTW, including, improvements in mental health, support and job accommodations.

Population

Characteristics of participants

Of the 721 CORSA participants, 498 (69.1%) were women (Table I). The mean age was 40 years and the responders were most likely to work within administration (20.2%) or social work (19.4%). The majority of participants reported no prior absence due to CMD (77.6%) and expected to return to work (73.8%). Most CORSA participants reported stress and/or burnout (48.3%), followed by depression (35.9%) as the reason for the absence. Several participants (12.5%) did not state a specific type of CMD but reported that their absence was due to psychological, psychosocial work/environmental, or personal problems.

Table II shows mean depression scores and prevalence of clinical depression separately for women and men among the questionnaire responders. Women had, on average, a higher MDI score and were more likely to be categorised with severe depressive symptoms. DSM-IV criteria for major depression were fulfilled by 44.4% of women and 27.9% of men.

When comparing the responders and non-responders, we did not find differences in age, expectancy to RTW, or prior absence due to CMD (Table I). However, non-responders were more likely to be women, to be manual and service workers, and to name depression or an unspecified psychological health problem as the reason for absence.

Discussion

In this paper we presented the design of the CORSA study, the characteristics of the participants including a non-response analysis and the prevalence of major depression among the baseline responders. We found that the prevalence of DSM-IV major depression was 44% among women and 28% among men. Olsen et al., who had also used the MDI for measuring major depression in the Danish general population, reported point prevalences of 3.6% and 3.0% for women and men respectively [28].

The CORSA cohort consists of all sick-listed employees residing in the municipality of Copenhagen who fulfilled the inclusion criteria and whose sickness benefit application form has been processed by the Job Centre Copenhagen from July 2007 to December 2007. Because completing the application forms is mandatory for receiving sickness benefits it can be reasonably assumed, that the vast majority of absentees have completed the form. However, not all forms are processed by the Job Centre. Application forms are first collected by a department managing the reimbursement, which transfer forms to the Job Centre Copenhagen. Forms are not transferred for example if the absentee already returned to work. However, as the participants represent the actual population seen by officials in the Job Centres, who are responsible for outlining reintegration plans, the knowledge gained from this study will have a high public health impact and will potentially be useful for improving rehabilitation processes.

We only had data on self-reported reasons for absence. This is a typical limitation in studies from Denmark, because sickness absence is often self-certified with no registration of medical diagnoses. Information on length absence and time to return to work, however, was assessed from register data. In the baseline questionnaire we used the MDI, a well-validated clinical instrument to assess level of depression [21,28,29]. Another strength of this study is the use of the mixed-method design because it allows for a more comprehensive understanding of RTW. Currently, the use of mixed-method design in rehabilitation research is relatively novel and our study may therefore help advance the field methodologically [30].

Table II. Depressive symptoms and prevalence of depressive disorders among baseline responders.

Score	Women ($n=232$)	Men ($n=61$)	Statistic
MDI score, mean ± SD	25.4 ± 11.9)	21.2 ± 11.1	$t=2.5$, $p=0.01$
MDI score, categorised			
No depression (0–19), % (n)	31.5 (73)	50.8 (31)	
Mild depression (20–26), % (n)	16.8 (39)	16.4 (10)	
Severe depression (27–50), % (n)	51.7 (120)	32.8 (20)	$\chi^2=8.73$, $p=0.01$
DSM-IV Major Depression			
No, % (n)	55.6 (129)	72.1 (44)	
Yes, % (n)	44.4 (103)	27.9 (17)	$\chi^2=5.46$, $p=0.02$

DSM-IV, diagnostic and statistical manual version IV; MDI, major depression inventory.

Future analyses

To study the prognostic value of the factors from the environmental, individual and health-related domain on the duration of absence we will perform univariate and multivariate Cox proportional hazard analyses to estimate hazard ratios and identify the model with the best fit. Analyses will be conducted separately for the predictors obtained from the application forms ($n = 721$) and the baseline questionnaires ($n = 298$). Since the application forms do not give information about medical diagnoses for sickness absence, we measured major depression and anxiety with well-established instruments in the baseline questionnaire. In future analyses we will investigate if major depression and anxiety measured with these instruments are predictive of time to RTW.

Identification of predictors for RTW outcomes is a prerequisite for the development of effective prevention strategies. Whereas many of the individual factors, e.g., age and gender, are not amendable to change, they may be useful in identifying high-risk groups. Furthermore, this study will provide detailed knowledge from the questionnaires and the interviews about the RTW experiences from the sick-listed employee perspective, which can be helpful for identifying unmet needs or problems which may occur during RTW.

Ethical considerations

This study has been notified to and registered by the Danish Data Protection Agency (Datatilsynet, see http://www.datatilsynet.dk/eng/index.html). According to the Danish Law, only projects using biological material need approval from the Danish National Committee on Biomedical Research Ethics (Den Centrale Videnskabsetiske Komité, see http://www.cvk.im.dk/site.aspx?p=513).

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